UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
KNOX CITY, TEXAS

# NOTICE OF RELEASE OF DUCK CREEK GERMPLASM TEXAS DROPSEED SELECTED CLASS OF NATURAL GERMPLASM

The Natural Resources Conservation Service, U.S. Department of Agriculture announces the release of a selected ecotype of Texas dropseed, *Sporobolus texanus,* Vasey.

As a selected release this plant will be referred to as Duck Creek Germplasm Texas dropseed. It has been assigned the NRCS accession number 9029932. Duck Creek Germplasm is released as a selected class of certified seed (natural track).

This alternative release procedure is justified because there are presently no commercial varieties available.

**Collection Site Information:** Duck Creek Germplasm was originally collected from seed in 1982 from native plants located along an intermittent stream flowing into Duck Creek north of Spur (N. Lat. 33° 32', W Long 100° 51') in Dickens County Texas. Elevation at the collection site is approximately 2320 feet; the soils are classified as Colorado fine sandy loams. Average precipitation for the area is around 22 inches. Other plants growing in association included sideoats grama, alkali sacaton, and western wheatgrass. Common bermudagrass and salt cedar are both invaders to the site and are common to wet saline seep conditions. The collection site is located in MLRA 78B - Rolling Plains, Western Part.

**Description:** Duck Creek Germplasm Texas dropseed is a tufted erect perennial, warm-season bunchgrass, indigenous to low, moist, somewhat saline or alkaline areas. It is widely distributed from western Kansas and eastern Colorado to western Texas and into New Mexico and Arizona. Stems are slender, 30-70 cm tall, often somewhat decumbent at the base. Leaf sheaths are rounded, glabrous or pubescent, blades are flat or folded rather stiff and are from 2.5-10 cm long and 1-4 mm wide. The inflorescence consists of a diffised panicle 15-30 cm long and about as wide, with widely spreading branches and branchlets. Spikelets are 2.3-3.3 mm long and are widely spaced on spreading branchlets. Plants reproduce from seed.

**Method of Breeding and/or** Selection: A total of 55 collections were originally received and evaluated at the PMC from 1983 to 1987. All collections were evaluated for survival, vigor, drought resistance, potential seed production, and above ground biomass production and quality. In 1984 the assembly was narrowed to 47 collections mainly due to the misidentified species and survivability. Four collections were isolated in 1987 and later narrowed to two collections: 9029932 Dickens County, TX and 9029930 from Stephens County, TX. Both selections were selected for further increase based on final seed production observations. The Duck Creek Germplasm collection (9029932 Dickens County collection) out performed Stephens County in initial seed increase fields producing consistently more quantity and with better quality seed (see attached evaluation summaries)

**Environmental Impact Assessment:** Duck Creek Germplasm Texas dropseed is a selection of naturally occurring gennplasm and has been unaltered from its original collection. Duck Creek Germplasm did not meet the assessment of a plant which could become invasive based literature reviews and the attached "Invasive Species Worksheet" (see attachment 2).

**Conservation Use:** The potential use of Duck Creek Germplasm is for range seeding and revegetation on disturbed or damaged sites that have saline problems. Texas dropseed may be used in areas where alkali sacaton and fourwing saltbush is adapted. Mostly in low, moist, somewhat saline or alkaline areas or adjacent to oil wells sites almost denuded of vegetation.

**Anticipated Area of Adaptation:** Duck Creek Germplasm's anticipated area of adaptation is MLRAs 42, 77, 78, in western Texas and western Oklahoma. It is adapted to a wide range of soil types but will perform best on loams to sandy loam soils. Saline tolerance is similar to but slightly less than that of alkali sacaton (6-12 millimhos).

**Availability of Plant Materials:** Generation 0 seed (equivalent to Breeder seed) will be maintained by the USDA-NRCS Plant Materials Center and is available in limited quantities to interested parties for increase purposes.

**References:**

Gould, F. W 1975. The Grasses of Texas. TAMU Press, College Station

USDA Bulletin No. 194,1958, Salt Tolerance of Grasses and Forage Legumes

USDA-SCS Soil Survey, Dickens County Texas, 1970.

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Attachment ▮ Summary of Initial and Advanced Evaluation of *Sporobolus* texanus.
Texas dropseed

[redacted]

| Accession - *origin* | Foliage Sz | Fol.Tx. | Fol.Amt. | DiseaseRst. | Dgth.Rst. | Seed Pro. | Vigor |
|---|---|---|---|---|---|---|---|
| 9022874 | 3.5 | 3 | 4 | 3 | 2 | 2.5 | 3.5 |
| 9028156 | 2.5 | 4 | 3 | 3 | 2 | 2 | 3 |
| 9029538 | 2.5 | 4 | 3 | 3 | 3 | 3.5 | 3 |
| 9018885 | 3 | 4 | 3 | 3 | 3 | 2.5 | 3.5 |
| 9019423 | 3.5 | 3.5 | 4 | 3 | 2 | 3 | 3.5 |
| 9028153 | 4 | 3.5 | 3.5 | 3 | 2 | 2.5 | 3.5 |
| 9031492 | 3.5 | 3.5 | 4 | 3 | 4 | 3.5 | 4.5 |
| 9004899 | 3.5 | 4 | 4.5 | 3 | 4 | 3 | 3.5 |
| 9035011 | 3 | 3 | 3.5 | 3 | 3 | 3.5 | 3.5 |
| 9028154 | 4 | 4 | 4 | 3 | 3 | 3 | 4 |
| 9029930 - Stephens Co.,TX | 2.5 | 3 | 3 | 3 | 3 | 3.5 | 3 |
| 9031439 | 2.5 | 3.5 | 2.5 | 2 | 3 | 2.5 | 3 |
| 9031407 | 3.5 | 3 | 4 | 3 | 3 | 4 | 3.5 |
| 9029933 | 2.5 | 3.5 | 3.5 | 3 | 3 | 3.5 | 3 |
| 9029932 - Dickens CO., TX | 3 | 3 | 3 | 3 | 3 | 3.5 | 3 |
| 9031463 | 3.5 | 3.5 | 3.5 | 3 | 2 | 2 | 3 |
| 9007618 | 3 | 3 | 2.5 | 3 | 3 | 3.5 | 3 |
| 9001907 | 2 | 3 | 2 | 3 | 2 | 3 | 2 |
| 9001906 | 2.5 | 3 | 3 | 3 | 3 | 3 | 3 |
| 9031540 | 2 | 3 | 3 | 3 | 3 | 3 | 3 |
| 9031537 | 3.5 | 3.5 | 3.5 | 3 | 3 | 2.5 | 3.5 |
| 9022875 | 3 | 3 | 4 | 3 | 2 | 3 | 3.5 |
| 9031444 | 3 | 3 | 3 | 3 | 3 | 4 | 4 |
| 9035645 | 2 | 3 | 2.5 | 3 | 3 | 4 | 2.5 |
| 9028152 | 4 | 3.5 | 3.5 | 3 | 3 | 3 | 3.5 |
| 9035025 | 2.5 | 3.5 | 4 | 3 | 3 | 3.5 | 4 |
| 9035009 | 2.5 | 3 | 3 | 3 | 3 | 3 | 3 |
| 9031626 | 3.5 | 4.5 | 3.5 | 3 | 3 | 4.5 | 4 |
| 9029940 | 2.5 | 3.5 | 3.5 | 3 | 2 | 2 | 3 |
| 9029936 | 3 | 3 | 3 | 3 | 3 | 4.5 | 3.5 |
| 9031320 | 3 | 3 | 3.5 | 3 | 3 | 4 | 3 |
| 9031317 | 3 | 4 | 3.5 | 3 | 3 | 4 | 3.5 |
| 9031539 | 3.5 | 3.5 | 3 | 3 | 3 | 2 | 3 |
| 9028157 | 2.5 | 3.5 | 3 | 3 | 2 | 3.5 | 2.5 |
| 9029540 | 3 | 3.5 | 3.5 | 3 | 3 | 3.5 | 3 |
| 9031464 | 3.5 | 3.5 | 4 | 3 | 2 | 2.5 | 3.5 |
| 9028155 | 4 | 3.5 | 4 | 3 | 2 | 3 | 4 |
| 9028151 | 2.5 | 3 | 3.5 | 3 | 2 | 3 | 3 |
| 9031538 | 3 | 3 | 3.5 | 3 | 3 | 2.5 | 3.5 |
| 9029928 | 4 | 3.5 | 3 | 3 | 2 | 2 | 4 |
| 9029929 | 3.5 | 3.5 | 3.5 | 3 | 3 | 3.5 | 3 |
| 9029539 | 2.5 | 3.5 | 3 | 3 | 3.5 | 4 | 3 |
| 9031353 | 2.5 | 3 | 3 | 3 | 3 | 4 | 3 |
| 9031383 | 2.5 | 3 | 3 | 3 | 3 | 4.5 | 3 |
| 9022873 | 3.5 | 3.5 | 4 | 3 | 3 | 2 | 3.5 |
| ✕ 9004899 | 4 | 3.5 | 3.5 | 3 | 3 | 3 | 4 |
| 9031416 | 3 | 2.5 | 3 | 3 | 3 | 3.5 | 4 |

**Attachment 2:** Invasive Species Worksheet

**Proposed release species:** Duck Creek Germplasm Texas dropseed

**Instructions:** Circle item under Yes or No column and follow to conclusion.

| | Yes | No |
|---|---|---|
| 1. Does the species invade elsewhere, outside of North America? | To 13 | To 2 |
| 2. Is it a specific hybrid with known seed sterility? | TO 3 | To 4 |
| 3. Does it spread quickly by vegetative means? | To 15 | To 16 |
| 4. Is it native to parts of North America other than the region of the proposed introduction? | To 5 | To 6 |
| 5. Does it spread quickly by vegetative means? | To15 | To16 |
| 6. Does it grow very rapidly in its first two years? | To 8 | To 7 |
| 7. Does it reproduce quickly vegetatively? | To 10 | To 9 |
| 8. Does it reproduce quickly vegetatively? | To 17 | To 11 |
| 9. Is it in a family or genus with species that are already strongly invasive in North America? | To 15 | To 16 |
| 10. Do the seeds require pretreatment for germination? | | |
| 11. Do the seeds require pretreatment for germination? | | |
| 12. Is it in a family or genus with species that are already strongly invasive in North America? | | To 16 |
| 13. Is it in a family or genus with species that are already strongly invasive in North America? | To 17 | To 14 |
| 14. Is it native to parts of North America other than the region of the proposed introduction? | To 15 | To 17 |
| 15. Further analysis/monitoring needed on germplasm | | |
| 16. Accept germplasm | | |
| 17. Reject germplasm | | |

Adapted from article - Predicting invasions of woody plants introduced into North America, Conservation Biology Vol. 11:193-203, Feb. 1997.

Reference(s) used for analysis of conclusion:


1. Gould, F. W 1975. The Grasses of Texas. TAMU Press, College Station.

2. USDA-SCS, 1971, 100 Native Forage Grasses in 11 Southern States, Ag. Handbook No. 139.

3. Correll and Johnston, Manual of the Vascular Plants of Texas, Texas Research Foundation, 1970.

4. Quinn, J.A., Ward, R.T., Ecological differentiation in sand dropseed, Ecol. Monogr., Winter 1969.

5. Hitchcock, A. S., Manual of the Grasses of the United States, US Govt. Printing Office 1950

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